

CONTRIBUTIONS TO THE FAUNA OF ROTTNEST
ISLAND.

II.—PYCNOGONIDA OF WESTERN AUSTRALIA.

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INTRODUCTION.

The Pycnogonida whose examination forms the basis of the present paper were collected at Rottnest on the West Australian coast by Mr. L. Glauert, Curator of the West Australian Museum.

The whole collection, with the exception of three individuals, is made up of specimens of *Ammothella bi-unguiculata*, the first members of the genus *Ammothella* recorded as occurring in Australasian waters. Of the three exceptions, two form a new variety of *Nymphopsis acinacispinatus* (Williams), the holotype of which was secured from the Queensland coast, whilst the remaining specimen is referable to Loman's relatively new genus *Pycnothea* (Loman 1922).

Ammothella bi-unguiculata (Dohrn) has now been recorded from such widely separated regions as the Gulf of Naples, the Californian coast, and finally, the West Australian coast. Although the present variety is uniformly larger, it nevertheless bears a close resemblance to the holotype described by Dohrn from the Gulf of Naples.

The genotype *Pycnothea selkirkii* was obtained by the Swedish Expedition to Juan Fernandez and described by Loman in 1922. *P. flynni* is thus the second species of the genus to be recorded.

My thanks are due to Professor T. Thomson Flynn for the opportunity of studying this collection and for much helpful criticism.

***Ammothella bi-unguiculata*, var. *australiensis*, var. nov.**

DESCRIPTION.

Trunk. Fairly stout. Lateral processes separated by about half their own diameter. Segmentation distinct. In a few specimens the most posterior suture is not well marked. Cephalic segment sub-equal in length to the second and third segments taken together. Cephalon fairly broad and swollen dorsally. Ocular tubercle low, wider than high, bluntly rounded anteriorly and flattened apically. Four well-marked equally developed eyes. Proboscis of very long elliptical shape, slightly longer than trunk, widest in the middle. Abdomen short, projecting upward at an angle of 45°.

Chelophores. Very minute, chela less than half as long as scape and rudimentary. Scape two-jointed although proximal joint appears to be fused to the cephalon.

Palps. Longer than proboscis, nine-jointed. First segment short, second and fourth segments sub-equal, third, fifth and sixth joints approximately equal. Well developed ventral extensions occur on four distal segments, each of which bears many clusters of sensory hairs.

Ovigers. Ten-jointed; proportionate length of segments different in male and female. Male—terminal joints swollen and short; two pinnate spines borne by tenth segment, whilst seventh bears a tuft of five long stiff spines. Female—paired pinnate spines borne on seventh, eighth and tenth segments. A single strongly curved spine near the distal extremity of segment nine is very characteristic of both sexes.

Legs. Fairly stout; all joints bear scattered spines. Second coxa more than twice as long as first and longer than third. First tibia two thirds length of second tibia; femur slightly shorter than the latter. Tarsus very small, bears tuft of spines ventrally. Auxiliary claws curved and well-developed being a little more than one quarter the length of propodus. Main claw vestigial. Spines numerous on ventral surface of propodus and at its extremity.

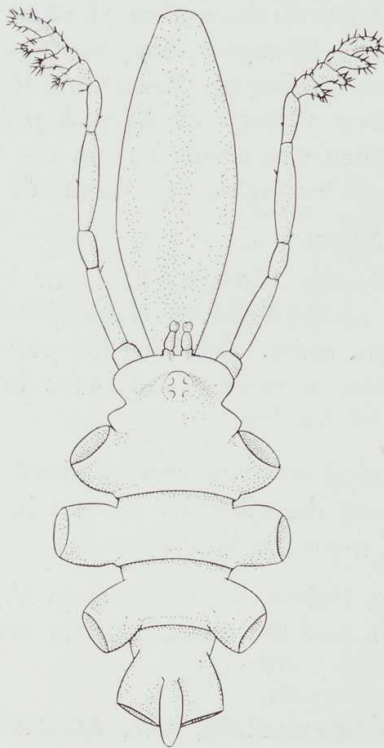


Figure 1.—*Ammothella bi-unguiculata*, var. *australiensis*, n. var., male. Dorsal view of body with palps and rudimentary chelophores. (x 25)

MEASUREMENTS OF MALE (HOLOTYPE) IN MM.

Length of Proboscis	1.4
Length of Cephalic Segment	0.63
Total length of Trunk	1.5
Greatest width of Cephalic Segment at the level of the 1st pair of lateral processes	0.87
Width of Trunk between the 1st and 2nd pairs of lateral processes	0.35
Length of Abdomen	0.37
Length of Chelophores	0.17

Third right leg:—

First coxa	0.23
Second coxa	0.513
Third coxa	0.41
Femur	0.78
First tibia	0.725
Second tibia	1.07
Tarsus	0.08
Propodus	0.46
Length of auxiliary claws	0.145

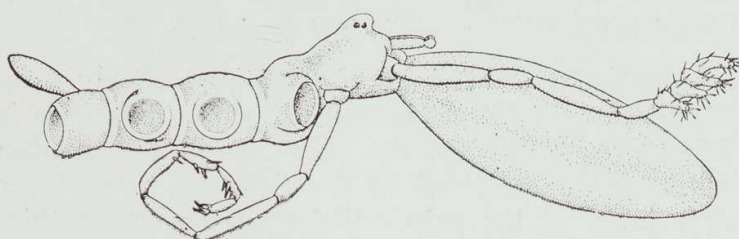


Figure 2.—*Ammothella bi-unguiculata*, var. *australiensis*, n. var., holotype female. Lateral view of body with palps, right oviger and rudimentary chelophores. (x 22)

MEASUREMENTS OF FEMALE (HOLOTYPE) IN MM.

Length of Proboscis	1.62
Length of Cephalic Segment	0.72
Greatest width of Cephalic Segment at the level of the 1st pair of lateral processes	1.07
Width of Trunk between 1st and 2nd pairs of lateral processes	0.4
Total length of Trunk	1.68
Length of Abdomen	0.46
Length of Chelophores	0.202

Third right leg:—

First coxa	0.23
Second coxa	0.522
Third coxa	0.44
Femur	0.89
First tibia	0.84
Second tibia	1.16
Tarsus	0.116
Propodus	0.551
Length of auxiliary claws	0.14

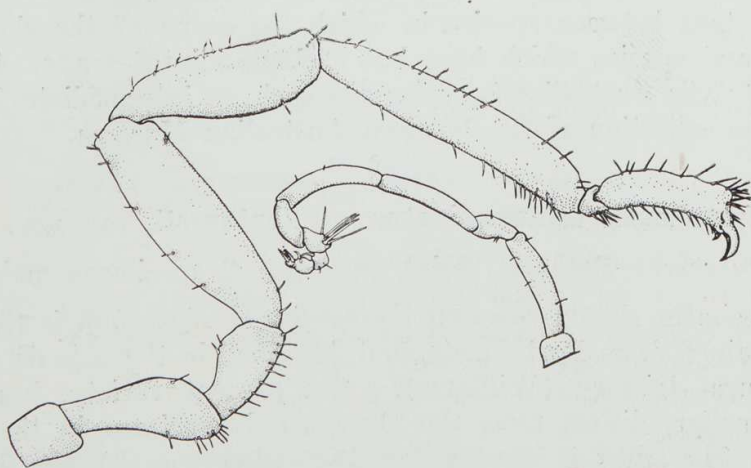


Figure 3.—*Ammothella bi-unguiculata*, var. *australiensis*, n. var. Right oviger and third right leg of male. (x 27½)

REMARKS.

The holotype of *Ammothella bi-unguiculata* was described as *Ammothea bi-unguiculata* by Dohrn (1881) from an immature specimen taken in the Gulf of Naples. It was Cole (1904) who referred this specimen to Verrill's genus *Ammothella*. There are two varieties of this species now known. The first of these, *Ammothella bi-unguiculata* var. *californica*, was described by Hall in 1912 and came from Laguna on the Californian coast. It differed in no essential from the holotype and only the extreme distance between the localities can be said to justify, if at all, the retention of *Ammothella bi-unguiculata*, var. *californica* as a distinct variety.

The variety *australiensis* here described, whilst closely resembling the holotype in many ways, can be distinguished by the difference in shape of the anterior part of the cephalon, the reduction in the number of joints in the scape of the chelophores, and by the distinctly serratiform nature of the four terminal joints of the palp. Unfortunately, as to this point, the condition of the terminal segments of the palp cannot be ascertained from the figures either of Dohrn or Hall. Neither alludes to serratiform outgrowths. The three varieties, that is, the holotype, the Californian and the Australian, all show the same peculiar suppression of the main claw and the great development of the curved auxiliary claws.

Bouvier 1913 has abandoned the opinion that *Ammothella* should be considered as a distinct genus and is, I believe, on right lines in suggesting that with *Ammothea* (*Leionymphon*) and *Achelia* it should rank as a subgenus of the genus *Ammothea*. Diagnoses of these subgenera are given by Bouvier.

Certain forms do occur, however, which combine some of the characters of more than one subgenus, thus *Achelia uni-unguiculata* (Dohrn) has a scape of two joints, normally characteristic of the subgenus *Ammothella*. Similarly, in *Achelia hispida* (Hodge), the palp is made up of nine joints, instead of the characteristic eight. On the whole, the more normal members of the subgenus *Ammothella* would appear to be more closely allied to the subgenus *Ammothea*. The difference in the condition of the scape, although very characteristic in some, is not so distinctive in others, for in the latter the proximal joint of the scape, besides being small, is fused to the cephalon, with the result that the chelophore scape appears to be single-jointed although set upon a short pedestal. Such forms are nevertheless described as possessing a two-jointed scape and in all probability they represent a transitional stage between species in which the scape of the chelophore is two-jointed and species which have but a single-jointed scape. *Ammothella bi-unguiculata* var. *australiensis* represents such an intermediate form. The type is in the collection of the Western Australian Museum.

***Nymphopsis acinacispinatus*, var. *bathursti*, var. nov.**

Occurrence—Bathurst Point, Rottneest. 2 specimens male.

Both specimens closely resemble the species of *Nymphopsis* (*N. acinacispinatus*) obtained from Port Curtis, and described in the Annals and Magazine of Natural History (Williams). The present variety, besides being uniformly smaller, differs from the Queensland specimen in the following points:—(1) The trunk is shorter than the abdomen. (2) The three dorsal compound spines and the ocular tubercle are approximately equal in height. (3) The ocular tubercle is tall and lacks the prominent pointed apex found

in the Queensland specimen. (4) The armature of the legs is different. (5) The genital process occurring on the second coxa is well developed on only the 3rd and 4th legs, being rudimentary on the 1st and 2nd.

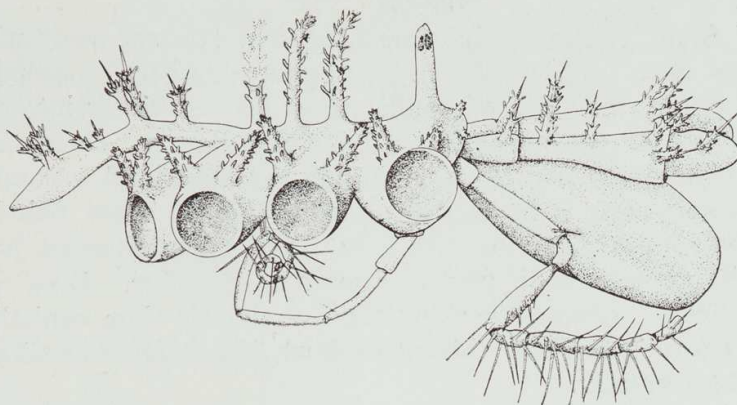


Figure 4.—*Nymphopsis acinacispinatus*, var. *bathursti*, n. var., male. Lateral view of body with chelophores, palp and oviger. (x 20)

MEASUREMENTS IN MM.

Length of Proboscis	..	..	..	..	..	..	1.6
Length of Trunk	..	..	..	..	..	..	1.1
Length of Abdomen	..	..	..	..	..	..	1.3
Length of Chelophore	..	..	..	..	..	..	1.3
<i>Third right leg:—</i>							
First coxa	..	..	..	..	..	..	0.4
Second coxa	..	..	..	..	..	..	0.6
Third coxa	..	..	..	..	..	..	0.43
Femur	..	..	..	..	..	..	1.25
First tibia	..	..	..	..	..	..	1.1
Second tibia	..	..	..	..	..	..	1.01
Tarsus	..	..	..	..	..	..	0.145
Propodus	..	..	..	..	..	..	0.87
Main claw	..	..	..	..	..	..	0.55
Auxiliary claws	..	..	..	..	..	..	0.27

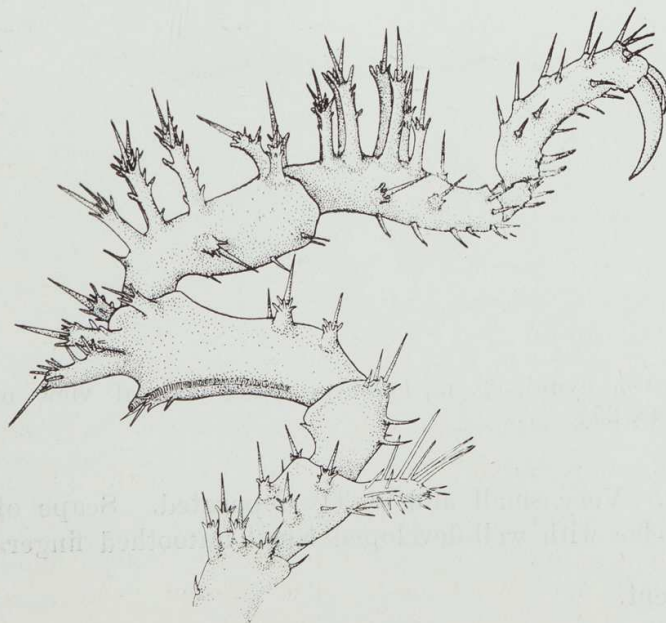


Figure 5.—*Nymphopsis acinacispinatus*, var. *bathursti*, n. var. Third right leg of male. (x 25)

The type is in the collection of the Western Australian Museum.

Pycnothea flynni sp. nov.

1 specimen, male.

DESCRIPTION.

Trunk. Stout, incompletely segmented, last two segments united. Lateral processes short and nearly touching one another. Cephalic segment considerably longer than rest of trunk, expanded anteriorly into collar which conceals the base of the proboscis and the bases of the chelophores. Low, rounded, dorsal elevations occur opposite the first and second pairs of lateral processes; each is beset with a loose tuft of short hair-like spines. Ocular tubercle low, stout and with a flattened apex, situated just in front of first lateral process, near posterior margin of collar. Eyes well-marked and approximately equal. Proboscis slightly shorter than cephalic segment, narrower at tip than at base. Abdomen short and stumpy, swollen in middle and carried horizontally.

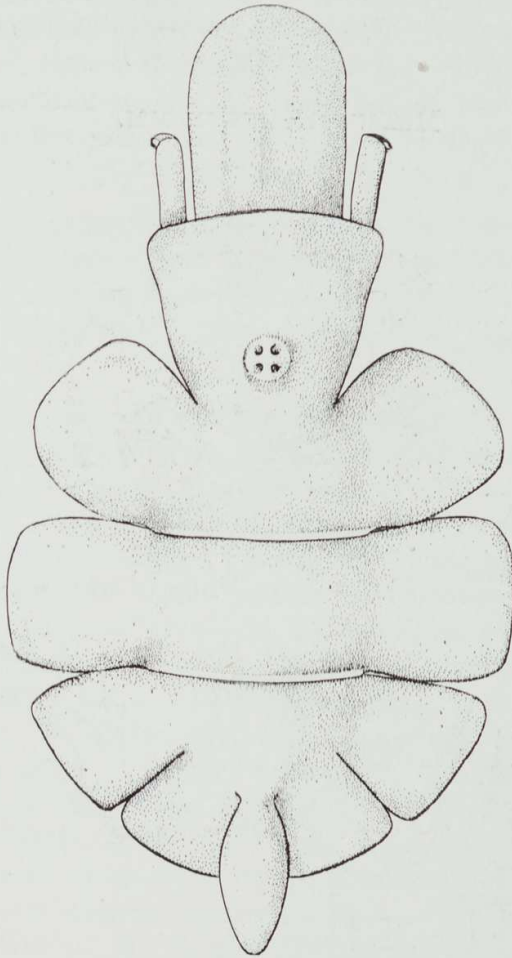


Figure 6.—*Pycnothea flynni*, sp. n., holotype male. Dorsal view of body with chelophores. (x 25)

Chelophores. Very small and widely separated. Scape of chelophore one-jointed. Chelae with well-developed equal untoothed fingers.

Palps. Absent.

Ovigers. Ten-jointed, first and second joints almost twice as thick as remaining joints; third, fourth and fifth sub-equal, remaining joints small, tenth smallest. Terminal joints bear scattered spines. No end claw.

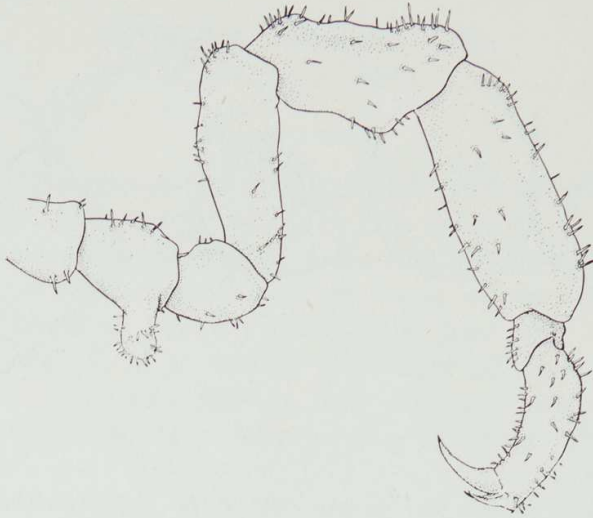


Figure 9.—*Pycnothea flynni*, sp. n., holotype male. Third right leg. (x 15)

REMARKS.

The present specimen agrees with Loman's genus *Pycnothea* described in his report on the Pantopoda collected by the Swedish Expedition to Juan Fernandez and Easter Island. It differs from the genotype, however, in a number of points. Thus in *P. flynni* there are two dorsal mounds on the body, relies, probably, of the body ridges so frequently present in *Ammothea*. There is no suggestion of any such outgrowths in Loman's species. Secondly, the chelophores, though quite small in *P. flynni*, are very much larger than those of *P. selkirkii*. Thirdly, the ocular tubercle is low in *P. flynni*, but is a definite pedestal, whereas in *P. selkirkii* it takes the form of a small mound. Fourthly, in *P. flynni* it occurs well in front of the lateral processes carrying the first pair of legs, whilst in *P. selkirkii* it is placed at the posterior border of the cephalic segment. Finally, the trunk in *P. flynni* is nearly twice the length of the proboscis, whereas in *P. selkirkii* the trunk is but little longer than the proboscis. The type is in the collection of the Western Australian Museum.

Note.—Just previous to publication a reference has been discovered in the Zoological Record, vol. lxxv. 1928, to the occurrence of *Ammothea biunguiculata* off the coast of Japan. It has not been possible to obtain a copy of this paper "Notes on some Pycnogons living semi-parasitic on Holothurians." Ohshima, H. *Proc. Imp. Acad. Tokyo* vol. 3, 1927. pp. 610-613.

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